

METHOD FOR MANUFACTURING TERBIUM ALUMINUM-BASED
PARAMAGNETIC GARNET SINGLE CRYSTAL

ABSTRACT OF THE DISCLOSURE

A method for manufacturing a terbium aluminum-based paramagnetic garnet single crystal which can easily produce a TAG single crystal having a large Faraday effect and a high light-transmittance even in the visual light range is provided, and the crystal, therefore is, usable as a material for a magneto-optical device. The method is for manufacturing a terbium aluminum-based paramagnetic garnet single crystal grown by a laser FZ method using a raw material rod made of paramagnetic garnet containing at least Tb and Al and a seed crystal, while at least one of the raw material rod and the seed crystal is porous, and the method can include the steps of preparing the raw material rod, preparing the seed crystal, melt-joining the raw material rod and the seed crystal, heat-melting the joint of the seed crystal and the raw material rod by application of optical energy thereto so as to prepare a melt zone, and cooling the resulting melt zone.